

# **Non-vaccine Recommendations to Prevent Acute Respiratory Disease among Personnel Living in Close Quarters**

**Companion Briefing to USACHPPM Technical Guide 314**

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# AGENDA

- Purpose
- Background
- Respiratory Disease
- Personal Measures
- Administrative Controls
- Engineering Controls
- Inspection Procedures
- Summary
- Conclusion

The background of the slide is a stylized American flag, with the stars and stripes visible. The stars are white on a blue field, and the stripes are red and white.

# **PURPOSE**

Inform Personnel (Military and Civilian) of the Potential for the Transmission of Respiratory Disease among Individuals Living in Close Quarters and the Countermeasures Necessary to Assure Personal Safety and Health

# BACKGROUND 1 of 2

- Significant preventive medicine problem for populations living in close quarters
- Training centers, dormitories, correctional facilities, tent cities, classrooms, DFAC...
- Recruits are more susceptible to respiratory infections





# BACKGROUND 2 of 2

- Vaccines
  - Limited effectiveness
  - Available for many but not all pathogens
- Non-vaccine interventions
  - Basic hygiene & sanitation
  - Engineering controls
  - Spacing of bunks
  - Cough etiquette
  - etc

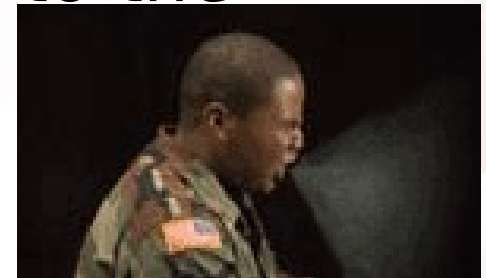


# COMMUNICABLE DISEASE

- An illness due to an infectious agent that can be passed from person to person
- Infection requires:
  - A source (reservoir) of infection
  - A means of transmission
  - A susceptible individual
- Disease control aims to break a link in this sequence

# ACUTE RESPIRATORY INFECTIONS

- Transmitted person-to-person by discharges from the respiratory tract
- Symptoms normally localized to the respiratory system
- Spread
  - Droplet – breathing, coughing, sneezing
  - Fomites – mutual use of contaminated objects
  - Direct transmission – kissing, mouth-to-mouth



The background of the slide is a close-up, slightly blurred image of the American flag, showing the stars and stripes. The text is overlaid on this background.

prevention ... how can you afford disease?

# PREVENTION



## PREVENTION:

# PERSONAL MEASURES

- Implemented at the individual level  
*with guidance and enforcement*

- Hand Hygiene
- Cough Etiquette
- Masks



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## PREVENTION:

# PERSONAL MEASURES

- Hand Hygiene
  - At a minimum, allow time to wash hands for at least 20 seconds with liquid soap and water before meals and after using the latrine
  - Require hand washing at every opportunity
  - Ensure latrines are supplied with liquid soap and paper towels

## PREVENTION: **PERSONAL MEASURES**

- Hand Hygiene
  - In absence of soap and water, alcohol based hand wipes or gel sanitizers may be used
  - If using gel, rub hands together until dry
  - Wash hands with soap and water before using sanitizers if they are visibly dirty



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## PREVENTION:

# PERSONAL MEASURES

- Masks
  - Not a substitute for cough etiquette
  - Acts as a barrier to droplets
  - Limits exposure to others in public places
  - Wear as directed by your doctor
  - Should be clearly identified on sick call slip

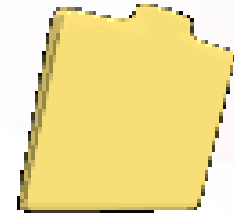




**PREVENTION:**

# **ADMINISTRATIVE CONTROLS**

- Involve policy implementation that may be easier to enact and sustain
  - Leadership Emphasis
  - Isolation
  - Space Requirements
  - Bunk Arrangement
  - Barracks Hygiene





## PREVENTION:

# ADMINISTRATIVE CONTROLS

- Leadership Emphasis
  - Essential to successfully preventing disease
  - Every leader must know and enforce prevention measures
  - Graphic aids available (free):  
[www.chppm.com](http://www.chppm.com) click on “Health Information Products” in the header



## PREVENTION:

# ADMINISTRATIVE CONTROLS

- Isolation
  - As directed by medical personnel
  - Separate infectious cases from the general population
  - Including meal times
  - Should be specified on sick call slip



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## PREVENTION:

# ADMINISTRATIVE CONTROLS

- Space Requirements-AR 40-5, DA Pam 40-11
  - 72 sqft/person sleeping space
  - A two man bunk then requires 144 sqft of floor space (72 x 2)
  - Use all available billeting
  - Avoid overcrowding in common use facilities
    - Dining facilities, classrooms, theaters, latrines...

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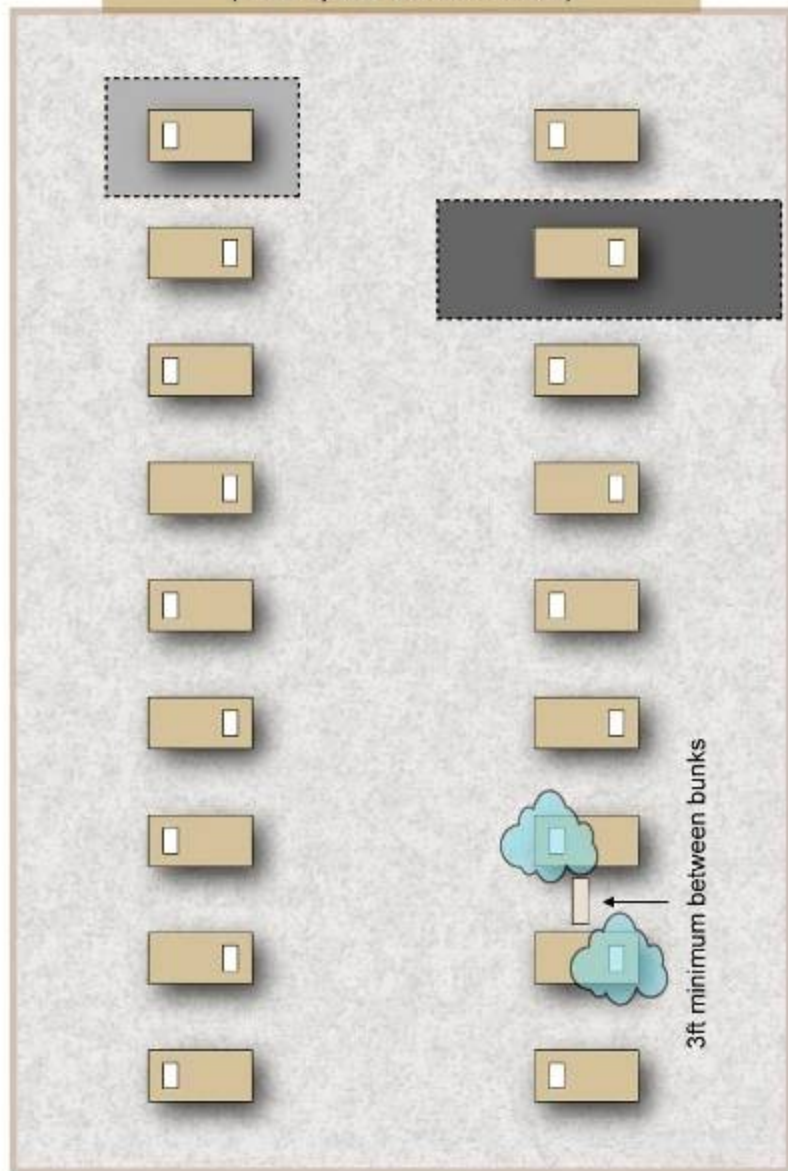
## PREVENTION:

# ADMINISTRATIVE CONTROLS

- Bunk Arrangement / Head-to-Toe Sleeping
  - At least 3 feet between bunks
  - Maximize floor space
  - Staggered rather than in-line bunk arrangement increase the distance between breathing zones
  - Alternate head and foot positions among adjacent bunks (Head-to-Toe)
  - Remove excess bunks
  - Graphical representation on the next slide.....

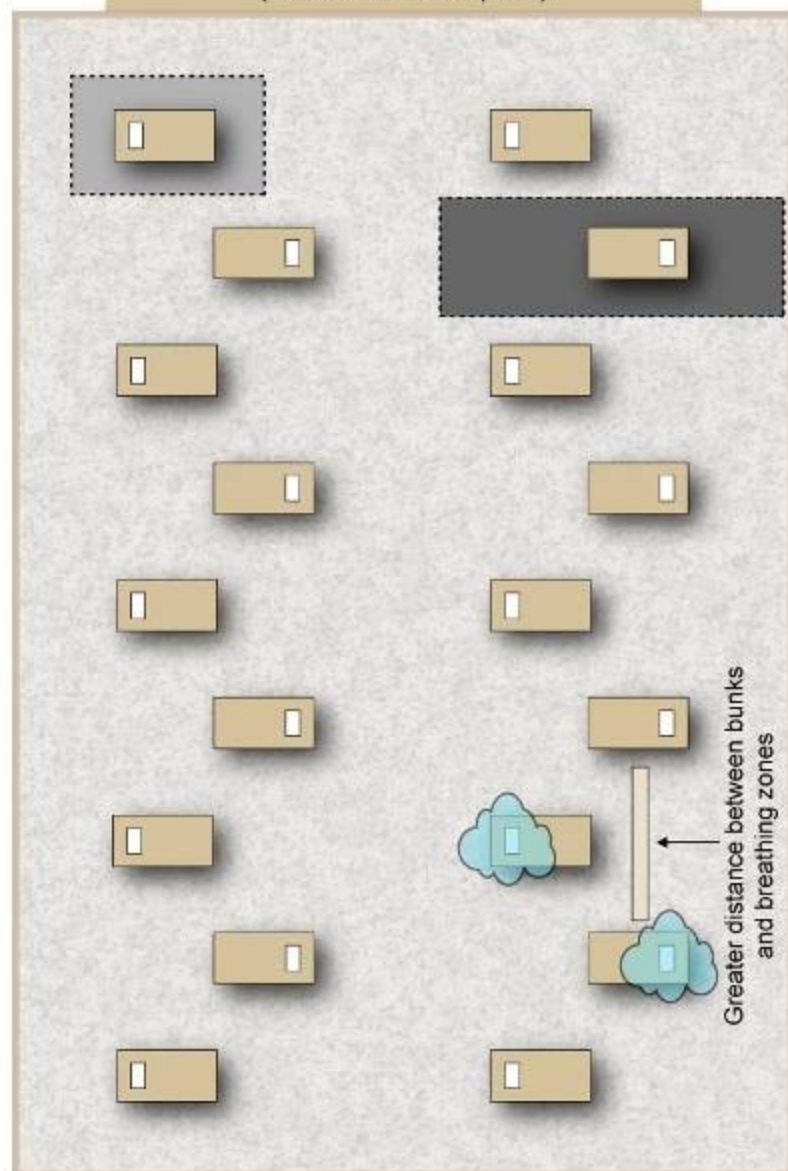


Arrangement 1  
(Floor space not maximized)



- 72 sqft/per 1-man bunk
- 144 sqft/per 2-man bunk
- 3ft minimum between bunks
- Breathing zone

Arrangement 2  
(Maximized floor space)



- 72 sqft/per 1-man bunk
- 144 sqft/per 2-man bunk
- Greater distance between bunks
- Breathing zone



## PREVENTION: **ADMINISTRATIVE CONTROLS**

- Barracks Hygiene
  - Can help reduce the spread of infectious disease
  - A sterile environment is not the goal – some exposure to germs is expected
  - Hygienically clean is different than visibly clean
    - Germs are killed by a disinfection process as opposed to simply removing visible dirt



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## PREVENTION:

# ADMINISTRATIVE CONTROLS

- Barracks Hygiene – Disinfectant Solution
  - Recommend household bleach and water
  - $\frac{1}{4}$  cup in 1 gallon of cool water or 1 tablespoon in 1 quart of cool water
  - Mix a fresh solution each day
  - Do not mix bleach with other cleaning products
  - Always read the label and follow manufacturer's instructions exactly

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## PREVENTION:

# ADMINISTRATIVE CONTROLS

- Barracks Hygiene – Cleaning Cycle
  - Daily – disinfect bathrooms, doorknobs, handles, light switches, high touch surfaces
  - Weekly – launder all soiled laundry and linens; mop floors and clean all horizontal surfaces with soap and water
  - Every Three Weeks – turn in blankets, pillows, and mattress covers for laundering
  - End of Training Cycle – turn in blankets, disinfect mattresses, launder mattress pads, clean all walls, blinds, windows, other areas not routinely cleaned with soap and water

**PREVENTION:**

# **ADMINISTRATIVE CONTROLS**

- Barracks Hygiene –  
Toilets, Urinals, Showers,  
and Sinks
  - Daily cleaning of toilets  
with toilet brush and  
disinfectant
  - Sinks, showers, and urinals  
should be disinfected daily  
with a bleach and water  
solution



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## PREVENTION:

# ADMINISTRATIVE CONTROLS

- Barracks Hygiene – Floors, Walls, and Other Environmental Surfaces
  - Low risk of exposure to germs
  - Clean horizontal surfaces such as window sills and floors weekly with detergent and water
  - Clean walls, blinds, and window curtains between training cycles



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## PREVENTION:

# ADMINISTRATIVE CONTROLS

- Barracks Hygiene – Laundry, Mattresses, and Pillows
  - Soiled clothing and linens laundered weekly
  - Turn in sheets and pillow cases weekly for laundering whether they appear soiled or not
  - Blankets, pillows, and mattress covers turned in every three weeks or at personnel change
  - Plastic-covered mattresses preferred
  - Discard fabric mattresses if wet, stained, or unserviceable
  - Clean and disinfect plastic mattress covers and exchange blankets between training cycles or when personnel change
  - Replace mattress and pillow covers if they become torn or unserviceable

## PREVENTION:

# ADMINISTRATIVE CONTROLS

- Education

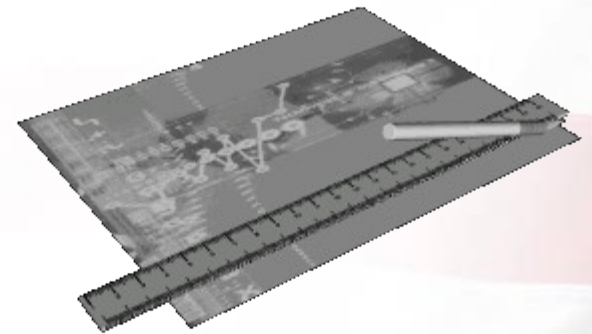
- Individuals can not be expected to perform without being informed
- This presentation is one educational tool
- Local Preventive Medicine Assets are another



## PREVENTION:

# ENGINEERING CONTROLS

- Do not require individual compliance so they are considered more reliable but can be resource intensive
  - Ventilation Standards
  - Air Filtration
  - Temperature & Humidity



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## PREVENTION:

# ENGINEERING CONTROLS

- Ventilation Standard
  - Indoor environments are complex and not fully understood
  - 5 cubic feet per minute (cfm) per person
  - **And** 0.06 cfm per square foot of floor space
  - Installation Industrial Hygiene experts can assess building ventilation

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## PREVENTION:

# ENGINEERING CONTROLS

- Air Filtration

- Inadequate evidence to support the use of HEPA filters
- Use a properly fitted air filter per manufacturer's recommendations
- Check monthly
- Replace per manufacturer's instructions
- Life of the filter will vary dependent upon building conditions





## **PREVENTION:**

# **ENGINEERING CONTROLS**

- Temperature and Humidity
  - Considered matters of personal comfort rather than health risks
  - Some associated between temperature and health symptoms
  - When practical maintain indoor habitable spaces at a temperature between 68°F and 76°F and a relative humidity between 20% and 60%

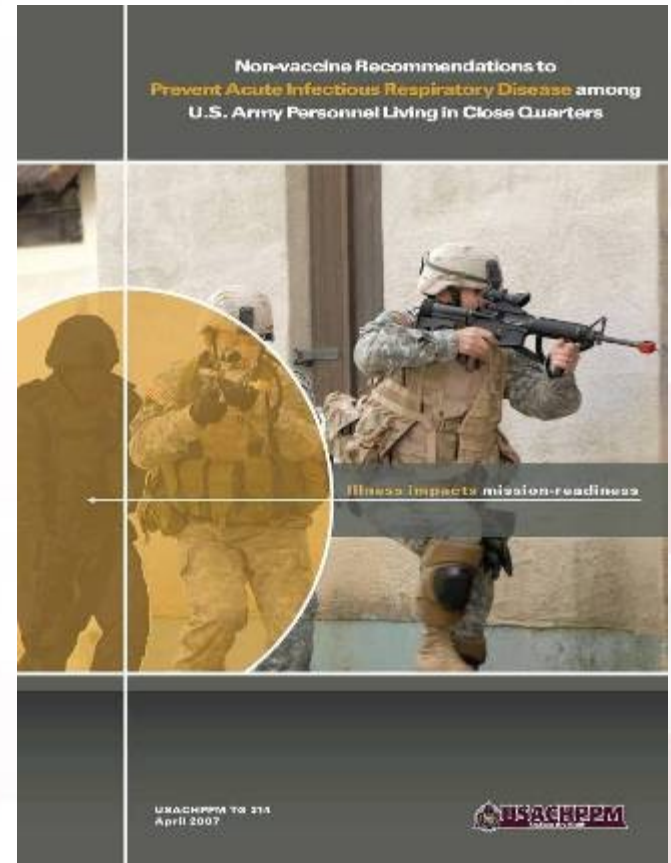
# INSPECTION PROCEDURES

- Individual units should conduct periodic self-inspection
  - Use sample inspection form in Appendix A of USACHPPM TG314
- Unit leaders should enforce hygiene and sanitation standards at all levels of the organization
- Call upon local Preventive Medicine assets for assistance



# SUMMARY

- Review of personal measures, administrative controls, and engineering controls to prevent respiratory disease
- Inspection procedures
- Consult USACHPPM TG314 for more detailed information



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# CONCLUSION

Health threat awareness and implementation of associated countermeasures discussed in this briefing are critical to all military missions (including combat, support, and sustaining base military and civilian forces). Apply this information during all types of military operations, including training, pre-deployment, deployment, and post-deployment operations







# Contact Your Local Preventive Medicine Service or Medical Support Unit for Additional Information



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